

EXHIBIT G

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

ORACLE AMERICA, INC.,)
Plaintiff,) Case No.
vs.) CV 10-03561 WHA
GOOGLE, INC.,)
Defendant.)
_____)

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DESIGNEE: HIROSHI LOCKHEIMER
Palo Alto, California
Tuesday, December 8, 2015

Reported by:
KELLI COMBS, CSR No. 5908
Job No. 2189227
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1 Q And what does that involve? 1

2 A What does leading it involve?

3 Q What is the effort?

4 A I see. What is the effort? Well, there

5 are a number of components to it. Would you like 1

6 me to enumerate them?

7 Q Please.

8 A So I can think of at least two distinct

9 efforts there that are interrelated but somewhat

10 separate. The first one we call Project Brillo, 1

11 and it is basically -- if you think of the Android

12 operating system and how widely it's been adopted

13 by the industry -- and "industry" here, I'm

14 referring to manufacturers basically -- one of the

15 benefits that Android brings as an operating system 1

16 is that, first of all, there are a lot of

17 manufacturers who are familiar with it, but also

18 there are a lot of component suppliers who are

19 familiar with it. And by "component suppliers" I'm

20 talking about chip manufacturers or sensor 1

21 providers, you know, silicon providers, hardware

22 providers.

23 And so this is -- really, I'm talking

24 about the Android kernel and -- and -- and sort of

25 that realm, not the application framework or 1

1 nothing of that nature, more just the hardware 1
2 portions of it.

3 There are a lot of hardware providers
4 that are familiar with Android, so our idea was to
5 take that broad support base for the Android 1
6 kernel and drivers and so on and make it possible
7 for folks who are familiar with that technology to
8 also build devices in the IOT space. So that's
9 what Project Brillo is.

10 And then the other -- I mentioned there 1
11 are at least two I can think of. The other one is
12 called Weave, and Weave is a -- you can think of
13 it as a protocol that enables devices to discover
14 each other and talk to each other.

15 One of the common problems in the IOT 1
16 space is that there are many, many devices out
17 there that are capable of connecting to the
18 Internet and doing something useful for you in
19 your life, but a lot of these devices don't know
20 how to talk to each other or don't even know about 1
21 each other. And our thinking was that if these
22 devices could all talk to each other and exchange
23 status or commands, things like that, maybe the
24 whole combination of all of these devices would be
25 much more powerful for the end user. 1

1 So that's what Weave enables at a 1
2 protocol level. It's separate from any operating
3 system. It's agnostic to what the operating
4 system is. It's just a way in which devices talk
5 to each other, a language -- not even a way, in 1
6 the sense that it's more like a language, a common
7 language, that's shared between devices.

8 Q Who is leading your effort with respect to
9 Android TV?

10 A Mario Queiroz. We can help you with the 1
11 spelling later.

12 Q What is your effort with respect to
13 Android TV?

14 A What is my effort?

15 Q Google's effort. When I say "you," I'm 1
16 only talking about Google, right?

17 A Okay. What is our effort related to
18 Android TV; that was your question?

19 Q Yes.

20 A Well, the thinking there is that 1
21 televisions these days have become pretty
22 sophisticated, and they all require an operating
23 system. So we figured we have an operating system
24 with -- with a lot of adoption and a lot of, again,
25 industry knowledge, and many times a phone 1

1 structured. 1

2 So when I took on the Chromecast team,

3 which is under Mario, who I mentioned before,

4 Mario had a business development team working for

5 him. Now, Mario reports to me now, so therefore, 1

6 the business development team under Mario report

7 into me.

8 That team has responsibility -- has had

9 responsibilities negotiating deals with various

10 manufacturers and partners in the TV/living room 1

11 space.

12 In parallel, Ornella's team, Jim

13 Kolotouros' team, had been negotiating other deals

14 not in the living room or TV space for many years

15 now. So there are two business development teams 1

16 now; one of them through Mario reporting into me,

17 another one through Jim Kolotouros reporting into

18 Ornella and Philipp.

19 It turns out, these two business

20 development teams oftentimes -- as I mentioned 1

21 earlier, a lot of TV manufacturers also build

22 phones and vice versa, so it turns out these two

23 business development teams are calling upon the

24 same partner. And -- so that got a little bit

25 confusing in the responsibility -- confusing not 1

1 only for Google but also for the partner. 1

2 So in order to -- this is why it's a
3 little bit hazy. That's why I can't give you an
4 exact answer, because it's a little bit history
5 and a little bit of organizational duplication in 1
6 this area that we're still working through.

7 Q Which team has responsibility for phones?

8 MS. ANDERSON: Objection; form.

9 THE WITNESS: For phones, it would be Jim
10 Kolotouros' team. 1

11 BY MS. HURST:

12 Q So the people responsible for negotiating
13 deals with phone manufacturers do not report through
14 you, true?

15 MS. ANDERSON: Objection; form. 1

16 THE WITNESS: Correct.

17 BY MS. HURST:

18 Q Is there any television manufacturer,
19 other than Sony, who's agreed to use Android TV?

20 A Yes. 1

21 Q Who else?

22 A Sharp is an example.

23 Q Anyone else?

24 A I believe Philips TP Vision is another
25 example. 1

1 Q Anyone else? 1

2 A In terms of actual TV sets, you know,

3 like the one we have over there, an actual TV set,

4 I believe that's the current sort of announced

5 list. There are others that we're in discussions 1

6 with, but there are also other TV partners as well.

7 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

18 Q Is your knowledge sufficient for you to

19 say one way or another?

20 A Is my knowledge sufficient to say one way 1

21 or another? I didn't say "one way or another." I

22 said "not that I'm aware of," so...

23 Q So you don't know?

24 A I don't know for a fact, no.

25 Q Is there any strategy or plan in the 1

1 business development group, the one that doesn't 1
2 report to you, to use revenue sharing or other forms
3 of payment in order to get television manufacturers
4 to use Android TV?

5 A Your question is whether that team that 1
6 doesn't report to me are contemplating using
7 revenue share to entice manufacturers to use
8 Android TV; is that your question?

9 Q Let's start there.

10 A I don't know. 1

11 Q Is there a group somewhere responsible for
12 getting people to use Android Wear?

13 A There's a group of people who's
14 responsible for not only developing but also
15 deploying Android Wear, yes. 1

16 Q When you say "deploying," that's what you
17 mean by getting other people to use it?

18 A Yeah, generally just getting other people
19 to use it, supporting them when they've decided to
20 use it, helping them commercialize it, helping them 1
21 support it.

22 Q Okay.

23 And does that team report through you?

24 A A portion of that team, yes.

25 Q Does the deployment piece report through 1

1 you? 1

2 A A portion of it.

3 Q Who's the senior-most person responsible

4 for Android Wear who reports to you or through you,

5 your line of command? 1

6 A David Singleton, and he reports directly

7 to me.

8 Q And where is he located?

9 A He lives in United Kingdom.

10 Q And is the Android Wear effort, is that 1

11 generally located in the United Kingdom?

12 A No. It's mixed.

13 Q Including some people here?

14 A Yes, here and Mountain View, correct.

15 Q Is there -- and who, outside of the chain 1

16 of reporting up through you, has some responsibility

17 for either development or deployments of

18 Android Wear?

19 A Well, I'll give you a couple of examples.

20 For instance, marketing is involved. Marketing 1

21 does not report to me.

22 Similarly, the deals that we talked

23 about, the business development aspects, that

24 doesn't report to me.

25 Q Is there any development plan or strategy 1

1 to use revenue sharing or other payment to potential 1
2 manufacturers of devices using Android Wear?

3 A Not that I'm aware of.

4 Q Are you aware, one way or another?

5 A I'm not aware of any plans, but that 1
6 doesn't mean that I'm absolutely 100 percent sure
7 that there aren't any plans.

8 Q So you don't know?

9 MS. ANDERSON: Objection; form.

10 THE WITNESS: I don't know for sure, no. 1

11 BY MS. HURST:

12 Q Did anybody suggest to you that when you
13 don't know the answer but you want to imply that the
14 answer is no, you should say "not that I'm aware
15 of"? 1

16 A No.

17 MS. ANDERSON: Objection; form.

18 BY MS. HURST:

19 Q Are there any manufacturers of any devices
20 who have agreed to use Android Wear? 1

21 A Say that again.

22 Q Are there any manufacturers of any devices
23 who have agreed to use Android Wear?

24 A Yes, there are manufacturers who have
25 adopted Android Wear. 1

1 Q How many? 1

2 A Less than 10. I can try enumerating them
3 right now. I don't know the exact number.

4 Q What types of devices generally have they
5 agreed to use Android Wear for? 1

6 A Watches.

7 Q Any other types of devices?

8 A So far, the only ones that have launched
9 are watches.

10 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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BY MS. HURST:

15

Q And what is Android Auto?

1

16

A It's a -- it's a number of things. It's

17

a term that refers to a number of projects that all

18

relate to the use of Android in a vehicle or

19

related to cars in some way.

20

Q And are there any vehicle or parts

1

21

manufacturers who have agreed to use Android in a

22

car or related to cars in some way?

23

A Yes.

24

Q And who are they?

25

A It's a pretty long list of automobile

1

1 manufacturers, names that you would recognize like, 1
2 you know, Ford or GM and so on. I think it's
3 something on the order of 50 or so car
4 manufacturers in the world who have decided to
5 adopt Android Auto in some form. 1

6 Q All right.

7 And over what period of time has that
8 occurred?

9 A The agreements with these manufacturers?

10 Q Yes. 1

11 A Car manufacturers?

12 Q Yes.

13 A I believe it's still ongoing, but I think
14 it started maybe two, three years ago.

15 Q And are the agreements with those car 1
16 manufacturers, is that handled by some group that
17 reports to you or by a different group?

18 A The agreements are handled by a different
19 group.

20 Q And who is the leader of that group? 1

21 A The leader of the group who's responsible
22 for agreements with car manufacturers, for example,
23 his name is Ariel Spivak.

24 Q And where is he located?

25 A He's located here in the Bay Area. 1

1 Q Did you speak with him to prepare for this 1
2 deposition?

3 A Not to prepare for this deposition, no.

4 Q Is there any plan or strategy to use
5 revenue sharing or some other form of payment or 1
6 economic consideration to car manufacturers in
7 connection with their agreement to use Android Auto?

8 A Not that I'm aware of.

9 Q Are you aware, one way or the other?

10 MS. ANDERSON: Objection; form. 1

11 THE WITNESS: I don't know if there are
12 any agreements where there are economic
13 considerations for car manufacturers.

14 BY MS. HURST:

15 Q How does Google plan to make money on 1
16 Android Auto?

17 A As I was mentioning earlier, a lot of
18 what drives Google is building products that people
19 want to use. So if you think of the alternative,
20 if you think of a world in which cars and phones 1
21 work well together, today, for instance, stepping
22 back today, the extent of a typical car and a phone
23 interaction is basically Bluetooth, you know, how
24 you get your phone calls over the car's stereo,
25 which is a pretty minimal integration, and over 1

1 Senior Vice President of Android that they have made
2 an evaluation of the license terms of OpenJDK and
3 concluded that they are a commercially acceptable
4 means of using the Java API packages, all or any
5 portion of them?

6 MS. ANDERSON: Objection; form, beyond the
7 scope and, again, same privilege instruction.

8 THE WITNESS: Yeah, I don't think I can
9 answer that without breaking privilege.

10 BY MS. HURST:

11 Q Well, my question was other than lawyers.
12 So if there's nobody other than lawyers, then the
13 answer is "nobody other than lawyers."

14 MS. ANDERSON: And this is confusing. If
15 you have information, other than lawyers, you may
16 provide it; it's not privilege. But if it's
17 information solely derived from lawyers, you may
18 indicate that in responding, that there's nothing
19 other than through lawyers.

20 THE WITNESS: Aside from that e-mail on
21 Enso that I received as part of being the Android
22 release mailing list, I don't know anything on this
23 topic, aside from my dealings with the legal team.

24 BY MS. HURST:

25 Q Other than the use of Android platform in

1 phone, tablets, for Android at Work, wearables,
2 Chrome OS, Chromecast, Android Auto, Android TV and
3 Internet of Things -- sorry, madam reporter, that
4 was a little fast -- do you have any other plans,
5 product roadmaps, strategies, functions, markets,
6 devices, goods or services planned to be associated
7 with Android?

8 MS. ANDERSON: Objection; form.

9 THE WITNESS: Not that I can think of, no.
10 That's a pretty exhaustive list. You mentioned TV,
11 Wear, Auto, obviously Android on phones and tablets
12 and the Internet of Things, that's all Android
13 related.

14 Chrome OS is not Android related,
15 Chromecast is not Android related, and I think
16 that's it. Those are my areas of responsibility.

17 BY MS. HURST:

18 Q What is ARC Welder?

19 A ARC Welder, to the best of my
20 knowledge -- my knowledge is not deep on this
21 topic, but ARC Welder is, I believe, a tool that
22 developers use -- yeah, it's a tool for developers.

23 Q To do what?

24 A My understanding is ARC Welder -- and
25 it's A-R-C, then, Welder. Developers use

1 ARC Welder to make it possible to run their Android
2 applications on -- within the app runtime for
3 Chrome or ARC on Chrome OS.

4 Q So ARC stands for the app runtime for
5 Chrome?

6 A Yeah. App runtime for Chrome OS, I
7 guess, is more accurate. I'm sorry, I slipped on
8 the first try, but it's app runtime for Chrome OS.

9 Q ARC Welder is a way of making Android
10 applications run on a device that uses the Chrome
11 operating system, true?

12 A ARC Welder is a tool for selective
13 developers. Not all -- it's not -- to the best of
14 my knowledge, it's not available to all developers.
15 But for a select set of developers, we provide them
16 with ARC Welder so that they can take their
17 applications and run it within the ARC system on
18 Chrome OS.

19 Q So what kind of devices use Chrome OS?

20 A There are a number of device categories:
21 Laptops, desktop computers, digital signage are
22 examples of devices that run Chrome OS.

23 Q So ARC Welder is a way of making Android
24 applications run on laptops that use Chrome OS,
25 true?

1 A To be very precise, some applications to
2 run on laptops running Chrome OS called
3 Chromebooks, yes.

4 Q Are you limiting the type --

5 In your answer, were you limiting the
6 types of applications, or were you limiting it to
7 the specific types of laptops?

8 A Both. So limited -- it's not all Android
9 applications. It's a subset, a vast subset,
10 meaning a very small subset of Android applications
11 are eligible to run in ARC, and I'm just pointing
12 out that laptops running Chrome OS are also known
13 as Chromebooks.

14 Q And what categories of apps are eligible
15 to run using ARC?

16 A It's not really separated by category,
17 per se. It's more separated by what's possible,
18 meaning not all applications are able to run in
19 ARC.

20 Q And what common characteristics define the
21 ones that are capable of running in ARC?

22 MS. ANDERSON: Objection; beyond the
23 scope.

24 THE WITNESS: I don't know that level of
25 technical detail. It's a technical determination.

1 It's not a policy thing. There are certain
2 technology choices made by the ARC team as well as,
3 I guess, what the application developer has done
4 that makes certain applications work well, whereas
5 certain applications not work well in ARC. So it's
6 manually tested and curated first.

7 BY MS. HURST:

8 Q I'm just trying to get some understanding
9 of this.

10 Can you describe for me in any way how the
11 function of, you know, these Android applications
12 relates to their ability or inability to run in
13 connection with ARC?

14 MS. ANDERSON: Objection; beyond the
15 scope.

16 THE WITNESS: Well, I guess another way of
17 saying it is ARC is not a -- it's -- how do I put
18 this? I'm trying to explain it, explain it well.

19 ARC is -- it's not like Android is running
20 inside of Chrome OS. ARC is a runtime that enables
21 some Android apps to run on Chrome OS, but it's not
22 like Android itself is running on Chrome OS, so that
23 means that --

24 I'll give you a very concrete example. I
25 believe Microsoft Word, which is available on

1 Android, if you take that and try to run it in ARC,
2 it won't run because ARC was built in such a way
3 that doesn't support all of the things that
4 Microsoft Word on Android needs, and so that's --
5 that's basically the gist of what works versus what
6 doesn't.

7 BY MS. HURST:

8 Q Can you give me some applications that
9 will run on ARC?

10 MS. ANDERSON: Beyond the scope.

11 THE WITNESS: I remember when we announced
12 ARC -- this was a year, a year and a half ago --
13 they did a demo, I think, of Evernote, which is a
14 note-taking app running on ARC, so, I guess, that's
15 one app.

16 I think the other example I can think of
17 is Vine; that's another app that runs on ARC. Last
18 I heard, there were about 100 or so applications
19 that run on ARC.

20 Just to put that in perspective, there are
21 about a million -- over a million applications in
22 Google Play, so you can tell it's a tiny, little
23 subset.

24 BY MS. HURST:

25 Q So does it require some kind of close

1 cooperation between your team and the app developer
2 in order to get things running -- Android
3 applications running on ARC?

4 A That's my understanding, yes. And that's
5 how an application -- application developer would
6 get ahold of ARC Welder in the first place. This
7 would be sort of a one-to-one relationship,
8 engineer-to-engineer or
9 product-person-to-product-person relationship
10 between the ARC team and the developer to ensure
11 that the app is running well.

12 Q Well, is it your plan to make --
13 ultimately to make ARC Welder broadly available so
14 that Android applications are available on laptop
15 and desktop computers running Chrome OS?

16 MS. ANDERSON: Objection; form.

17 THE WITNESS: I don't know. You know,
18 we've gone back and forth on how -- how broad --
19 broadly available we want to make the ARC
20 technology. You can think of it as an experiment of
21 sorts, and so I don't know what the latest thinking
22 is from the team on that. It's been probably three
23 to six months since I've gotten an update from them
24 on ARC Welder.

25

1 BY MS. HURST:

2 Q Does the ARC Welder result in either the
3 Dalvik Virtual Machine or the Android runtime
4 running within Chrome?

5 MS. ANDERSON: Objection; beyond the
6 scope.

7 THE WITNESS: I don't know.

8 BY MS. HURST:

9 Q Are Chromebooks special purpose computers?

10 MS. ANDERSON: Beyond the scope.

11 THE WITNESS: Can you define "special
12 purpose computer"?

13 BY MS. HURST:

14 Q Have you ever heard that term?

15 A Yes, but it's used in so many different
16 ways that I don't know what it means. What did you
17 mean when you asked the question?

18 Q Is it the same or different with respect
19 to its purpose than an ordinary desktop computer?

20 MS. ANDERSON: Objection; form.

21 THE WITNESS: I don't know if there's one
22 singular purpose for a, quote, ordinary desktop
23 computer, so it's hard for me to answer that. For
24 instance, you know, my mother-in-law uses her
25 desktop computer to manage her Mary Kay products.

1 small portion he's covering. It's not a big part of
2 the topics, but I wanted to remind you that his
3 seven hours is almost over.

4 MR. RAMSEY: So I think we attempted to --
5 Ms. Hurst attempted to address Topic 7, but the
6 witness was unable or unwilling to testify about
7 that.

8 MS. ANDERSON: Nobody touched on Topic 7.

9 MS. HURST: Keep going. If you've got
10 more on Topic 3, finish.

11 MR. RAMSEY: Yeah, so I just --

12 BY MR. RAMSEY:

13 Q So when the -- the phone manufacturers
14 engage with you about application development, are
15 they concerned about the types of resources they
16 have to invest in the process of learning how to
17 develop?

18 MS. ANDERSON: Objection; form, beyond the
19 scope.

20 THE WITNESS: Well, I was trying to give
21 you two examples. The first one -- example I was
22 giving you was about material design. In that case,
23 actually they were excited because they -- they
24 thought material design, first of all, was a very
25 good design direction, and they also saw it as a way

1 for them to conserve their resources because they
2 wouldn't have to reinvent a new design language of
3 their own, so they saw it as a savings, and so
4 that's -- that's the material design example.

5 The other example I would give is when we
6 come out with new form factors, for instance, when
7 we launched Android Wear, it was important for us to
8 make sure that these phone manufacturers, their
9 phone -- their apps that came with their phones also
10 properly supported Android Wear, so we did some
11 outreach to them on those topics.

12 BY MR. RAMSEY:

13 Q So did the application developers for the
14 phone manufacturers have to learn, for example, the
15 new APIs associated with something like Android Wear
16 or materials; is that fair?

17 MS. ANDERSON: Objection; form, beyond the
18 scope.

19 THE WITNESS: Any time there are new APIs
20 that we add to Android, like the 3,000 new APIs we
21 added to L, everyone, every app developer, whether
22 they're from phone manufacturers or a kid in Topica,
23 Kansas, you know, they have to -- they have to learn
24 it because it's new to them.

25 Q Does that take some time for application

1 developers across the communities that you've just
2 talked about to learn APIs?

3 MS. ANDERSON: Objection; form, beyond the
4 scope.

5 THE WITNESS: I think it depends on the
6 competence level of these developers and also the
7 interest level that they have in adopting these new
8 APIs. So I don't know if there's a fixed number,
9 per se, but sure, it's just like learning anything
10 new. Everyone has their own pace and their own
11 desire level, level of desire, to, you know, decide
12 how deep they want to go.

13 BY MR. RAMSEY:

14 Q So other than --

15 I'm going to come back to fragmentation.

16 Other than version fragmentation, does
17 Google Play Services help mitigate any other type of
18 fragmentation within Android?

19 MS. ANDERSON: Objection; form.

20 THE WITNESS: Just to clarify, the version
21 fragmentation, I didn't say Google Play Services
22 would solve version fragmentation. I said it
23 handles a small sliver of that problem, just for the
24 portions that are included in Google Play Services.
25 Really, in relative terms, it's a tiny, little

1 I, the undersigned, a Certified Shorthand
2 Reporter of the State of California, do hereby certify:

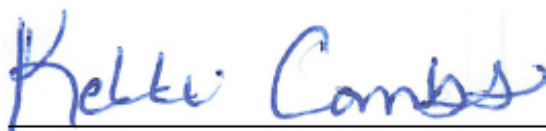
3 That the foregoing proceedings were taken
4 before me at the time and place herein set forth; that
5 any witnesses in the foregoing proceedings, prior to
6 testifying, were administered an oath; that a record of
7 the proceedings was made by me using machine shorthand
8 which was thereafter transcribed under my direction;
9 that the foregoing transcript is a true record of the
10 testimony given.

11 Further, that the foregoing pertains to the
12 original transcript of a deposition in a Federal Case,
13 before completion of the proceedings, a review of the
14 transcript [X] was [] was not requested.

15 I further certify I am neither financially
16 interested in the action nor a relative or employee of
17 any attorney or any party to this action.

18 IN WITNESS WHEREOF, I have this date
19 subscribed my name.

20
21 Dated: 12/10/2015

22
23 
24

KELLI COMBS

25 CSR No. 7705